BOBBY JINDAL
GOVERNOR

HAROLD LEGGETT, PH.D.
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No.

Agency Interest (AI) No. 83623
Activity No. PER20070001

Mr. Russ Snyder
Plant Manager
Acadia Power Partners, LLC
30385 Crowley-Eunice Hwy
Eunice, LA 70535

RE: **Prevention of Significant Deterioration (PSD) Permit**, PSD-LA-645(M-2) Acadia Power Partners LLC - Acadia Power Station
Acadia Power Partners LLC, Eunice, Acadia Parish, Louisiana

Dear Mr. Snyder:

Enclosed is your permit, PSD-LA-645(M-2). Should you have any questions, contact Rusty J. Jack of the Air Permits Division at (225) 219 – 0513.

Please be advised that pursuant to provisions of the Environmental Quality Act and the Administrative Procedure Act, the Department may initiate review of a permit during its term. However, before it takes any action to modify, suspend or revoke a permit, the Department shall, in accordance with applicable statutes and regulations, notify the permittee by mail of the facts or operational conduct that warrant the intended action and provide the permittee with the opportunity to demonstrate compliance with all lawful requirements for the retention of the effective permit.

Sincerely,

Cheryl Sonnier Nolan
Assistant Secretary

_____
Date

CSN: rjj

c: US EPA Region VI

Agency Interest No. 83623

PSD-LA-645(M-2)

AUTHORIZATION TO CONSTRUCT AND OPERATE A MODIFIED MAJOR SOURCE PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE, LAC 33:III.509

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Acadia Power Partners, LLC
30385 Crowley-Eunice Hwy
Eunice, LA 70535

is including startup and shutdown emission estimates for the Acadia Power Partners LLC - Acadia Power Station near

30385 Eunice Crowley Hwy
Eunice, LA 70535

subject to the emissions limitations, monitoring requirements, and other conditions set forth hereinafter.

Signed this _____ day of _____, 2009.

Cheryl Sonnier Nolan
Assistant Secretary
Office of Environmental Services
Louisiana Department of Environmental Quality

BRIEFING SHEET

Acadia Power Partners LLC - Acadia Power Station
Agency Interest No.: 83623
Acadia Power Partners LLC
Eunice, Acadia Parish, Louisiana
PSD-LA-645(M-2)

PURPOSE

The purpose of this modification is to add startup and shutdown emissions from the facility.

RECOMMENDATION

Approval of the proposed permit modification.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division

PROJECT DESCRIPTION

The nominal 1000 MW Acadia Power Station operates near Eunice in Acadia Parish. The station consists of four 183 MW combined cycle gas turbines, four HRSGs equipped with duct burners, two steam turbines, two cooling towers, and auxiliary equipment. This modification is to include startup and shutdown emission estimates from the facility.

Estimated emissions, in tons per year, are as follows:

Pollutant	Before	After	Change	PSD de minimis
PM_{10}	352.20	352.20	-	15
SO_2	21.00	21.84	+ 0.84	40
NO_X	600.00	600.00	-	40
CO	1472.00	1,472.00	-	100
VOC	97.00	97.65	+0.65	40
NH_3	456.00	455.52	-0.48	N/A

TYPE OF REVIEW

All emission changes are due to reconciliation to include startup and shutdown emissions at the facility. No physical change or change in the method of operation has occurred at the facility. Therefore, the modification is not "major" as defined in LAC 33:III.509.B. BACT analysis is required for startup and shutdown operations.

BEST AVAILABLE CONTROL TECHNOLOGY

This modification will add startup and shutdown emissions. As startup and shutdown operations involve only the gas turbines, BACT was reevaluated for these units alone.

Gas turbines: Using Dry Low NO_X burners and selective catalytic reduction (SCR) to maintain

BRIEFING SHEET

Acadia Power Partners LLC - Acadia Power Station
Agency Interest No.: 83623
Acadia Power Partners LLC
Eunice, Acadia Parish, Louisiana
PSD-LA-645(M-2)

maximum NO_X emissions at 4.5 ppmv. Good design, proper operating and maintenance practices, and using clean natural gas are used to maintain maximum PM/PM_{10} at 23 lbs/hr, CO at 25 ppmv, and VOC at 3 ppmv. The turbine is optimized for full load operation. BACT limits for 50% - 75% loads were determined by compliance testing. BACT during periods of startup and shutdown (defined as less than 50% turbine load) shall be good design, proper operating and maintenance practices, and using clean natural gas.

Duct burners: Using Low NO_X burners and selective catalytic reduction (SCR) to maintain maximum NO_X emissions at 0.10 lbs/MM BTU. Good design, proper operating and maintenance practices, and using clean natural gas are used to maintain maximum PM/PM_{10} at 0.01 lbs/MM BTU, CO at 0.08 lbs/MM BTU, and VOC at 0.02 lbs/MM BTU.

Integrated drift eliminators are to be used to control PM/PM_{10} emissions from the cooling towers.

AIR QUALITY IMPACT ANALYSIS

This permit modification will include startup and shutdown emissions from the facility. An updated air quality analysis is not required. The air quality analysis for the original design was documented in PSD-LA-645 and summarized in Table II of this permit.

ADDITIONAL IMPACTS

Soils, vegetation, and visibility will not be adversely impacted by the proposed facility, nor will any Class I area be affected. The project will not result in any significant secondary growth effects.

PROCESSING TIME

Application Dated:	January 12, 2005
Application Received:	January 13, 2005
Additional Information Dated:	June 28, 2006, February 8, 2007, December 20, 2007, & May 12, 2009
Effective Completeness Date:	March 13, 2009

PUBLIC NOTICE

A notice requesting public comment on the proposed modification was published in *The Advocate*, Baton Rouge, Louisiana, on <<Date>>, 2007; and in <<*Local Paper*>>, <<City>>, Louisiana, on <<Date>>, 2007. Copies of the public notice were also mailed to individuals who have requested to be placed on the mailing list maintained by the Office of Environmental Services on <<Date>>, 2007. A proposed permit was also submitted to U.S. EPA Region VI on <<Date>>, 2007. All comments will be considered prior to a final permit decision.

PRELIMINARY DETERMINATION SUMMARY

Acadia Power Partners LLC - Acadia Power Station
Agency Interest No.: 83623
Acadia Power Partners, LLC
Eunice, Acadia Parish, Louisiana
PSD-LA-645(M-2)
May 13, 2009

I. APPLICANT

Acadia Power Partners, LLC
30385 Crowley-Eunice Hwy
Eunice, LA 70535

II. LOCATION

Acadia Power Partners, LLC, Acadia Power Station is located at 30385 Eunice Crowley Hwy, Acadia Parish, Eunice, Louisiana. Approximate UTM coordinates are 473.00 kilometers East, 3,343.20 kilometers North, zone 15.

III. PROJECT DESCRIPTION

This modification is to include startup and shutdown emission estimates from the facility.

Estimated emissions, in tons per year, are as follows:

Pollutant	Before	After	Change	PSD de minimis
PM_{10}	352.20	352.20	-	15
SO_2	21.00	21.84	+ 0.84	40
NO_X	600.00	600.00	-	40
CO	1472.00	1,472.00	-	100
VOC	97.00	97.65	+0.65	40
NH_3	456.00	455.52	-0.48	N/A

IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for new major or modified major stationary sources requires review under Prevention of Significant Deterioration regulations, 40 CFR 52.21. PSD review entails the following analyses:

A. A determination of the Best Available Control Technology (BACT);

B. An analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;

C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);

D. An analysis of the PSD increment consumption;

E. An analysis of the source related growth impacts;

F. An analysis of source related growth impacts on soils, vegetation, and visibility;

G. A Class I Area impact analysis; and

H. An analysis of the impact of toxic compound emissions.

A. BEST AVAILABLE CONTROL TECHNOLOGY

Normal Operations

BACT has not changed as a result of this permit modification for periods of normal operation. The following is BACT as previously determined in PSD-LA-645(M-1) during normal operation:

Gas turbines: Using Dry Low NO_X burners and selective catalytic reduction (SCR) to maintain maximum NO_X emissions at 4.5 ppmv. The NOx 4.5 ppmv limit only applies during normal operations. Good design, proper operating and maintenance practices, and using clean natural gas are used to maintain maximum PM/PM_{10} at 23 lbs/hr, CO at 25 ppmv, and VOC at 3 ppmv. The turbine is optimized for full load operation. BACT limits for 50% - 75% loads were determined by compliance testing.

Duct burners: Using Low NO_X burners and selective catalytic reduction (SCR) to maintain maximum NO_X emissions at 0.10 lbs/MM BTU. Good design, proper operating and maintenance practices, and using clean natural gas are used to maintain maximum PM/PM_{10} at 0.01 lbs/MM BTU, CO at 0.08 lbs/MM BTU, and VOC at 0.02 lbs/MM BTU.

Integrated drift eliminators are to be used to control PM/PM_{10} emissions from the cooling towers.

Startup and Shutdown

During periods of start-up and shutdown, the following BACT will apply:

BACT for CO is good combustion practices, proper operating and maintenance practices, good design and combustion of clean natural gas. CO BACT for periods of start-up and shutdown is identical to BACT during normal operation. A CO BACT hourly limitation of 2,332 lb/hr for periods of start-ups and shutdowns is appropriate.

The Acadia Power Station proposes no additional controls for NOx emissions during start-ups and shutdowns. BACT for normal operation is Selective Catalytic Reduction (SCR). Operation during periods of start-ups and shutdowns (defined as less than 50% turbine load) involves non optimum SCR temperatures and decreased NOx conversion efficiency. Increased ammonia flow rates during periods of start-up and shutdown is marginally effective in controlling NOx and will result in a decrease of SCR catalyst life. Therefore, the use of the SCR during start-ups and shutdowns is infeasible. A NOx BACT hourly limitation of 275 lb/hr for periods of start-ups and shutdowns is appropriate.

B. ANALYSIS OF EXISTING AIR QUALITY

This permit modification will include startup and shutdown emissions from the facility. An updated air quality analysis is not required. The air quality analysis for the original design was documented in PSD-LA-645 and summarized in Table II of this permit.

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

Refined modeling was not required for any pollutants.

D. PSD INCREMENT ANALYSIS

Increment analysis was not required for any pollutants.

E. SOURCE RELATED GROWTH IMPACTS

The modification will not result in any significant secondary growth effects.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

There will be no significant impact on area soils, vegetation, or visibility.

G. CLASS I AREA IMPACTS

Louisiana's Breton Wildlife Refuge, the nearest Class I area, is over 100 kilometers from the site, precluding any significant impact.

H. TOXIC EMISSIONS IMPACT

The selection of control technology based on the BACT analysis included consideration of control of toxic emissions.

V. CONCLUSION

PRELIMINARY DETERMINATION SUMMARY

Acadia Power Partners LLC - Acadia Power Station
Agency Interest No.: 83623
Acadia Power Partners, LLC
Eunice, Acadia Parish, Louisiana
PSD-LA-645(M-2)
May 13, 2009

The Air Permits Division has made a preliminary determination to incorporate startup and shutdown emissions at the Acadia Power Partners LLC - Acadia Power Station near Eunice, in Acadia Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

Acadia Power Partners LLC - Acadia Power Station
Agency Interest No.: 83623
Acadia Power Partners LLC
Eunice, Acadia Parish, Louisiana
PSD-LA-645(M-2)

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary" dated March 2, 2009, and subject to the following emissions limitations and other specified conditions. Specifications submitted are contained in the application and Emission Inventory Questionnaire dated January 12, 2005, along with supplemental information dated June 28, 2006, February 8, 2007, and December 20, 2007.

MAXIMUM ALLOWABLE EMISSIONS RATES

Emission Point	Description	Units	PM_{10}	NO_X	CO	VOC
1-99, 2-99 3-99, 4-99	Gas Turbine Unit 1, 2, 3, 4 183 MW (each)	ppmv* lbs/hr lbs/hr SUSD TPY	- 20.0 - 84.0	4.5 190.0 275.0 140.0	(a) 25 1225 2332.0 307.0	(a) 3 28 256.0 14.6
5-99, 6-99 7-99, 8-99	Duct Burner Unit 1, 2, 3, 4 323 MM BTU/hr	lb/MM BTU TPY	0.01 9.6	0.10 40.0	0.08 244.0	0.02 38.8
9-99, 10-99	Cooling Water Tower No. 1, 2 152,000 gpm (each)	lbs/hr TPY	0.76 3.3	-	-	-

(a) for 75% - 100% load. At 50 - 75% load, limits were determined by compliance testing.
(*) at 15% O_2 and on a dry basis.

2. Permittee shall ensure compliance with the opacity and particulate emission limits of this permit by visually inspecting the generation unit stacks, for opacity on a weekly basis. If visible emissions are detected, then, within three (3) working days, the permittee shall conduct an opacity reading in accordance with EPA Reference Method 9. Records of visible emission checks shall include emission point ID, date visual check was performed, a record if visible emissions were detected, and a record of any Method 9 testing conducted and the results of any Method 9 test. These records shall be kept on site and available for inspection by the Office of Environmental Compliance, Surveillance Division.

3. To maintain VOC emissions from the station below the preconstruction monitoring exemption level of 100 TPY, the total operating time of the duct burners, Emission Point 5-99, 6-99, 7-99, and 8-99, shall be limited to no more than 6000 hours per year. The duct burners operating time shall be monitored and recorded each month, as well as the total operating time for the last twelve months. These records shall be kept on site and available for inspection by the Office of Environmental Compliance, Surveillance Division. Operating time above the maximum listed in this specific condition for any twelve consecutive month period shall be a violation of this permit and must be reported to the Office of Environmental Compliance, Enforcement Division. A report showing the monthly total operating time as well as the total operating time for the 12-months periods which end in the preceding six month calendar period shall be submitted to the Office of Environmental Compliance, Enforcement Division semiannually in accordance with Part 70

SPECIFIC CONDITIONS

Acadia Power Partners LLC - Acadia Power Station
Agency Interest No.: 83623
Acadia Power Partners LLC
Eunice, Acadia Parish, Louisiana
PSD-LA-645(M-2)

General Conditions.

4. To ensure compliance with permitted emission limits, a stack test shall be performed on the gas turbines and the duct burners, Emission Points 1-99, 2-99, 3-99, 4-99, 5-99, 6-99, 7-99, and 8-99. The following test methods and procedures from New Source Performance Standards, 40 CFR 60, Appendix A, shall be used:

   a. PM, NO_X, and SO_2 by methods and procedures specified by 40 CFR 60.48a(f) and 60.335(c).

   b. Carbon Monoxide by Method 10-Determination of Carbon Monoxide emissions from Stationary Sources.

   c. Opacity by Method 9-Visual Determination of Opacity of Emissions from Stationary Sources.

   d. VOC speciation, including formaldehyde, by Method 18 - Measurement of Gaseous Organic Compound Emissions by Gas Chromatography

   e. VOC by Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer

   The tests shall be performed on the turbines without the duct burners to obtain the actual emission rates from the gas turbines. The test shall be repeated with both the gas turbines and the duct burners in operation. Emissions from the duct burners are obtained by subtracting the turbine emissions from the total emissions of each generation unit. A test for CO emissions from any one of four gas turbines at operating rate between 50 - 75% is required to determine CO emission limits.

5. Comply with the Louisiana General Conditions as set forth in LAC 33:III.537.

TABLE I: BACT COST SUMMARY

Acadia Power Partners LLC - Acadia Power Station
Agency Interest No.: 83623
Acadia Power Partners LLC
Eunice, Acadia Parish, Louisiana
PSD-LA-645(M-2)

Control Alternatives		Availability/ Feasibility	Negative Impacts (a)	Control Efficiency	Emissions Reduction (TPY)	Capital Cost ($)	Annualized Cost ($)	Cost Effectiveness ($/ton)	Notes
A BACT cost analysis is not necessary.									
Notes: a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety									

TABLE II: AIR QUALITY ANALYSIS SUMMARY

Acadia Power Partners LLC - Acadia Power Station
Agency Interest No.: 83623
Acadia Power Partners LLC
Eunice, Acadia Parish, Louisiana
PSD-LA-645(M-2)

Pollutant	Averaging Period	Preliminary Screening Conc.	Significant Monitoring Conc.	Current Monitored Conc.	Level of Significant Impact	Maximum Modeled Conc.	Modeled + Background Conc.	NAAQS	Modeled PSD Increment Consumption	Allowable Class II PSD Increment
		($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)	($\mu g/m^3$)
Particulates	24-hour	NR	10	NR	5	NR	NR	150	NR	30
	Annual	NR	-	NR	1	NR	NR	50	NR	17
NO_2	Annual	NR	14	NR	1	NR	NR	100	NR	25
CO	1-hour	NR	-	NR	2000	NR	NR	40,000	NR	-
	8-hour	NR	575	NR	500	NR	NR	10,000	NR	-

NR = Not Required
NAAQS = National Ambient Air Quality Standards